

## Claims

What is claimed is:

- 1 1. A method for allocating resources in a circuit switched data network, comprising:
  - 2 receiving a request for a resource from a device coupled to the circuit switched
  - 3 data network;
  - 4 granting the resource to the requesting device if the resource is available,
  - 5 otherwise:
    - 6 examining a first factor corresponding to an instantaneous quantity of data to be
    - 7 transmitted by the requesting device;
    - 8 examining a second factor corresponding to a rate of change in the instantaneous
    - 9 quantity of data to be transmitted by the requesting device;
    - 10 examining a third factor corresponding to a time of utilization of the resource by
    - 11 the requesting device;
    - 12 granting the resource to the requesting device based on the examination of the
    - 13 first, second and third factors.
- 1 2. The method of claim 1, wherein the resource comprises a communications channel in
- 2 the circuit switched network.
- 1 3. The method of claim 2, wherein the communications channel in the circuit switched
- 2 network comprises a radio frequency communications channel in the circuit switched
- 3 network.

1 4. The method of claim 1, wherein receiving a request for a resource from a device  
 2 coupled to the circuit switched data network, comprises receiving a request for a resource  
 3 from a device coupled to the circuit switched data network when a threshold for  
 4 requesting the resource has been achieved.

1 5. The method of claim 4, wherein the threshold comprises a depth of a data transmission  
 2 queue for the device.

1 6. The method of claim 5, wherein the depth of the data transmission queue for the device  
 2 comprises a moving average of the depth of the data transmission queue for the device.

1 7. The method of claim 4, wherein the threshold comprises a rate of change in a depth of  
 2 a data transmission queue for the device.

1 8. The method of claim 7, wherein the threshold comprises a moving average of the rate  
 2 of change in the depth of the data transmission queue for the device.

1 9. The method of claim 4, wherein the threshold comprises a time of utilization of the  
 2 resource by the device.

1 10. The method of claim 9, wherein the threshold comprises a moving average of the  
 2 time of utilization of the resource by the device.



13           examining a third factor corresponding to a time of utilization of the resource by  
14   the requesting device;  
15           granting the resource to the requesting device based on the examination of the  
16   first, second and third factors.

1    14. The article of manufacture of claim 13, wherein the resource comprises a  
2    communications channel in the circuit switched network.

1    15. The article of manufacture of claim 13, wherein the communications channel in the  
2    circuit switched network comprises a radio frequency communications channel in the  
3    circuit switched network.

1    16. The article of manufacture of claim 13, wherein receiving a request for a resource  
2    from a device coupled to the circuit switched data network, comprises receiving a request  
3    for a resource from a device coupled to the circuit switched data network when a  
4    threshold for requesting the resource has been achieved.

1    17. The article of manufacture of claim 16, wherein the threshold comprises a depth of a  
2    data transmission queue for the device.

1    18. The article of manufacture of claim 17, wherein the depth of the data transmission  
2    queue for the device comprises a moving average of the depth of the data transmission  
3    queue for the device.

1 19. The article of manufacture of claim 16, wherein the threshold comprises a rate of  
2 change in a depth of a data transmission queue for the device.

1 20. The article of manufacture of claim 19, wherein the threshold comprises a moving  
2 average of the rate of change in the depth of the data transmission queue for the device.

1 21. The article of manufacture of claim 16, wherein the threshold comprises a time of  
2 utilization of the resource by the device.

1 22. The article of manufacture of claim 21, wherein the threshold comprises a moving  
2 average of the time of utilization of the resource by the device.

1 23. The article of manufacture of claim 1, wherein receiving a request for a resource from  
2 a device coupled to the circuit switched data network when a threshold for requesting the  
3 resource has been achieved, comprises adjusting the threshold for requesting the resource  
4 based on a number of resources already allocated to the device, and receiving the request  
5 for the resource from the device coupled to the circuit switched data network when the  
6 threshold for requesting the resource has been achieved.

1 24. A method for allocating a communications channel in a circuit switched data  
2 network, comprising:



6 transmit data to a remote communications device capable of being coupled to the circuit  
7 switched data network when a threshold for requesting allocation of the communications  
8 channel has been achieved.

1 27. The method of claim 26, wherein the threshold comprises a depth of a data  
2 transmission queue for the remote communications device.

1 28. The method of claim 27, wherein the depth of the data transmission queue for the  
2 remote communications device comprises a moving average of the depth of the data  
3 transmission queue for the remote communications device.

1 29. The method of claim 26, wherein the threshold comprises a rate of change in a depth  
2 of a data transmission queue for the remote communications device.

1 30. An article of manufacture, comprising:  
2 a machine accessible medium, the machine accessible medium providing instructions,  
3 that when executed by a machine, cause the machine to allocate a communications  
4 channel in a circuit switched data network, comprising:  
5 receiving a request at a communications device coupled to the circuit switched  
6 data network to allocate the communications channel to transmit data to a remote  
7 communications device capable of being coupled to the circuit switched data network;  
8 granting the request if the communications channel is available, otherwise:

9           examining a first factor corresponding to an instantaneous quantity of data to be  
10 transmitted to the remote communications device;

11           examining a second factor corresponding to a rate of change in the instantaneous  
12 quantity of data to be transmitted to the remote communications device;

13           examining a third factor corresponding to a time of utilization of the  
14 communications channel by the remote communications device;

15           allocating the communications channel between the communications device and  
16 the remote communications device based on the examination of the first, second and third  
17 factors.

1   31. The article of manufacture of claim 30, wherein receiving a request at a  
2 communications device coupled to the circuit switched data network to allocate the  
3 communications channel to transmit data to a remote communications device capable of  
4 being coupled to the circuit switched data network, comprises receiving a request at a  
5 communications device coupled to the circuit switched data network to allocate the  
6 communications channel to transmit data to a remote communications device capable of  
7 being coupled to the circuit switched data network when a threshold for requesting  
8 allocation of the communications channel has been achieved.